Elle
Vers temporaire
"R&D Organigramme"

5 March 1973

MEMORANDUM FOR: Assistant Deputy Director for Science and Technology

SUBJECT: Consolidation of Agency R&D Activities

1. An initial investigation of the R&D activities and assets of TSD has been completed. Though our numbers lack precision, I am now fairly confident that we have a pretty good idea of the number of people and the amount of money TSD is spending in the R&D area. Though there are some uncertainties about certain organizational elements, we have identified the principal elements involved. It appears that there are pockets of R&D outside the Development and Engineering Section of TSD, and these pockets may cause some difficulty. Generally, however, R&D activities have been increasingly consolidated under [redacted] in the D&E Section. In order to get more precise information about these matters, it will probably be necessary to approach TSD. 25X1

2. Insofar as Commo is concerned, we have a general understanding as to which elements are involved in R&D and a rough idea of the amount of money involved. We have scheduled a trip to [redacted] next Monday to visit these facilities to see what work is actually under way. These arrangements were made long before the possibility of consolidation emerged. 25X1

3. Before any further steps are taken, it seems to me important that we within DD/S&T decide ourselves on the basic ground rules we should follow if we are to assume a broader R&D mission than has been the case in the past. I think it essential, for example, that we establish some rationale that will serve as a basis for defining the inter-relationships among the various groups involved. Though we can depart from this in practice and make accommodations

where necessary, my limited experience in this business thus far has convinced me that some touchstone is necessary in making the decisions that continually arise as to who should do what. In developing such a rationale, we should consider its effects on the existing situation within the DD/S&T.

4. The development of basic R&D missions and functions will force a number of decisions that should give shape to the consolidation we want to pursue. I believe we know enough or soon will know enough about both TSD and Commo to then define the division we want to propose. With that generally in mind, we can then go after more precise information and investigate the very difficult problems involved in truly effecting some sort of consolidation.

Sayre Stevens
Director of Research and Development

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CONSOLIDATION OF AGENCY

RESEARCH, ENGINEERING, AND SYSTEMS DEVELOPMENT ACTIVITIES

This paper describes a consolidation and realignment of Agency research, engineering and systems development activities to achieve a more effective and responsive technical capability.

I. REORGANIZATION OBJECTIVES

1. At present, Agency research, engineering, and developmental activities are scattered through all four directorates and seven different offices. While historically this arrangement has served a useful purpose, in recent years it has become increasingly difficult for the Agency to pursue a flexible and integrated R&D program responsive to rapidly changing requirements and to the new opportunities offered by the rapid pace of technological advancement. As one might expect, this decentralized organizational structure is characterized by a broad range of contracting practices and personnel qualifications and performance. More important, we have never found an adequate mechanism for insuring full coordination and cooperation across the seven different offices nor have we been able to move money or people resources to respond to changing priorities. Even at the informal working level, organizational barriers have tended to inhibit free flow of technical and engineering information.

2. A large fraction of the money spent by the Agency on advanced technology and systems development is budgeted through the National

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Reconnaissance Program and administered by the Office of Special Projects. Partly by policy and partly by precedent, these activities have been only loosely coupled to broader Agency technical objectives. Particularly when looking to the future, it will be increasingly important to develop organizational structures which encourage effective use of Agency resources in dealing with reconnaissance satellites as integrated information systems without the constraints imposed by the current arrangements. By the same token, the hardware capability and engineering expertise developed on these satellite programs has potential applications to more general technical activities and requirements of interest to the Intelligence Community.

3. The reorganization plan outlined below would consolidate all Agency research, engineering, and systems development in one organization and is designed to meet the following objectives:

a) maximize flexible deployment of technical personnel and available funds in pursuit of new initiatives.

b) establish a simplified set of relationships between the Agency and the industrial R&D community, thus strengthening the Agency's ability to demand sustained, high quality support from industry and insuring coordinated and uniform contracting procedures.

c) establish at the office level of single Agency R&D interface with the operations and production communities, thus insuring the consideration of their needs in all phases and by all parts of the development process.





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d) establish a single office responsible for the development of an overall Agency R&D program which is able to consider the merits and costs of the full range of R&D options available.

II. ORGANIZATION

1. A new organization would be established in the DD/S&T called "Research and Engineering." It would incorporate all of the functions now performed in OSP and ORD. In addition, all research and development functions now being performed by OEL, TSD, OC, and NPIC would be transferred to Research and Engineering.

2. Research and Engineering will have the responsibility for all Agency research and development activities. This responsibility will include all phases, from the development of the overall plan to the testing and evaluation of equipment and systems prior to their delivery to appropriate operational pr production elements. All R&E functions will be in direct support of one or more of the five Agency components concerned with the operational employment of equipment and systems or, in the case of analytical techniques or aids, in support of one of the Agency's production elements. Research and Engineering will be responsible for those procurements which are necessary to its developmental activity and for those "few of a kind" procurements in direct support of operations where modifications or unusual testing are required. The operational offices have a responsibility for all aspects of operations, including routine procurements of systems, subsystems or components which have been developed

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by R&D or are available essentially as shelf items. R&E will not have management responsibility for any pperational or intelligence analysis activities. The attached figure diagrams a tentative organization for Research and Engineering identifying the key functional units within the office.

3. Four relatively discrete, major activities must be performed within Research and Engineering:

- exploratory research and development in pursuit of long range Agency objectives
- development and engineering in direct and continuous support of the various operational organizations of the Agency
- the development of systems which are of sufficient complexity to require management by a project organization
- very large-scale project work dedicated to the development and testing of major collection or data processing systems

It will be the responsibility of the Office of the Director of R&E to forge an overall R&D program appropriately coordinating and integrating the activities in all these areas.

4. Organization of Research and Engineering. R&E will be composed of four major components: Research and Exploratory Development, Systems Development, Equipment Engineering, and Mission Analysis/Advanced Engineering. In addition separate project office organizations will be established within R&E to insure dedicated and focused attention on major developmental projects;

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a) Research and Exploratory Development (RED) organization will be charged with pursuing research and exploratory engineering in areas of plausible future Agency interest. Therefore, its activities shall not be limited to fulfilling operational requirements currently validated by the users, although it will consult with and seek the advice of potential customers for its exploratory developments. Research and Exploratory Development activities will include the pursuit of basic technologies of special interest to the Agency in order to advance or modify the state-of-the-art as required for the improvement of operational equipment or the development of new systems. Its budget will be established as a fixed portion of Agency R&D spending. RED will investigate new concepts of technical and clandestine collection, including the problems of gaining and maintaining target access. This work may be carried through to the point of demonstrating prototype feasibility. Work will also be done on new techniques of information processing and intelligence analysis. Exploratory investigations in the life sciences aimed at better understanding, determining, and exploiting human behavior and health will be conducted.

b) A System Development (SD) organization would be responsible for activities which are no longer exploratory but are intended to meet well defined operational specifications. System Development would be managed by a senior, experienced program manager who would have reporting to him project managers responsible for work within specific project areas. In general, the work undertaken within the division will not include the large-scale projects which require large, organizationally integrated management teams. It would, however, involve system development projects





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of various types in such categories as smaller emplacement platforms, stay-behind sensors and discrete communication systems.

c) The Equipment Engineering organization will be the group principally oriented towards servicing the specific hardware development, test and evaluation needs of the Agency operational elements: TSD/DDO, Office of Technical Collection (OEL), Office of Communications, NPIC, and the Office of Security.

The Equipment Engineering group will in general draw its requirements from the specific needs of the operational elements as opposed to stated intelligence collection requirements generated by the production elements of the Intelligence Community. Broadly, the Engineering Support efforts will serve as a bridge, in many cases, between the exploratory R&D work and the operational equipment orientated efforts of the several programs. Personnel in this group will be available, both to the Exploratory Program as well as to the other programs, to provide reinforcement: they will serve in many cases as "change agents." A flow of some personnel to and from the programs and the Engineering Support Group will be encouraged. In addition, members of this group will be available to assist outside the RDT&E organization as may be required from time to time. Equipment Engineering will be responsible for design, development and testing of electronic, optical, audio, etc., equipment and subsystems intended for use by operational personnel in pursuit of their assigned missions and by the technical collection organizations.

The Equipment Engineering organization will be structured along functional lines of the technical disciplines required to match the needs of the "customers." In addition, those parts of the TSD and OC labs which do engineering development work will be consolidated in this organization. (Those elements of the labs devoted to research may be placed under the Research and Exploratory Development Group).

The Equipment Engineering organization will have the direct responsibility for maintaining a close working relationship with customer organizations so as to insure a detailed understanding of current and projected needs. Appropriate design requirements and specifications will be coordinated with this organization and operational personnel will be invited to participate in testing and training exercises as necessary or desirable.

5. The Office of the Director of Research and Engineering must manage the full range of ongoing R&D activities and plan the future course of the research and development program.

a) In order to support the Director in his planning and programming role, the Office of the Director will include a Mission Analysis and Advanced Engineering group. This group will have a long-range planning function and will continuously examine future development alternatives in the light of project consumer requirements, performance studies, and anticipated developments within basic technology. The group will serve as the focus for relationships with the production community and will be responsible for maintaining a detailed understanding of future

collection needs as anticipated by the operational and analytical communities. In performing its role, the group must take a broad view in assessing the performance and viability of alternative development mixes to meet user requirements. Through its investigations the group will also insure the coordination of activities among the other elements of Research and Engineering and give guidance to the Director as to the assignment of activities to its various groups.

The Advanced Engineering function will maintain a capability to conduct preliminary system design studies with the objective of identifying new system initiatives. This capability together with appropriate contractor support will contribute to assessments of technical feasibility, performance and cost of potential program activities. The advanced engineering activities will be guided by requirements studies and measured in terms of incremental contribution in the context of available or alternative collection resources. Both the engineering and analysis will be structured to support informal and balanced management resource allocation decisions.

An additional function of the Mission Analysis and Advanced Engineering group will be the design and development of procedures and software to support efficient and effective tasking of technical collection resources. This function will be directed both towards assisting the production community in better understanding available and projected capabilities as well as towards supporting system operations.

b) The Office of Research and Engineering will provide the assignment on a rotational basis of selected R&E engineering personnel

to the various operational organizations supported by the office. These engineers would function as integrated members of the resident office with the dual objective of providing direct operational exposure for R&E personnel and of building improved informal communications channels between engineering and operations. The tentative plan calls for assigning one engineer to TSD, OC, NPIC and to each of the major ground site activities.

c) The remaining Office components, security, contracts, comptroller, and administrative services, will perform support services typical of similar existing activities in OSP and OEL.

III. FUNCTIONAL INTERFACES WITH OPERATIONAL ORGANIZATIONS

1. Program Planning and Fund Allocation. All Agency R&D funds will be allocated to the DD/S&T and will be under the management control of the Director of Research and Engineering. In laying out his future year budget and program plans he will consult with the operational and production elements of the Agency and will program for funds that are judged to be necessary to meet the future needs of each operational component. As he implements his current year program, he will not reprogram such funds away from operational component support without consulting with the manager of that component and the approval of the DD/S&T.

2. Quick Reaction Engineering Support to the Operators. Each of the operational organizations should be allowed technical resources and funds to perform limited engineering support for their operations. However, it is important that these activities not drift gradually into functions that are truly R&D in nature. To prevent this from happening,

the operational organizations should be allowed to do modifications to existing equipment only if both the following conditions apply: (a) the modifications are an assemblage of off-the-shelf components and (b) the modifications are needed for an operation which is less than six months from implementation. If the modification requires engineering modification of components or if it is to be performed for an operation more than six months away, the modification should be the responsibility of the Equipment Engineering Division of the Office of Research and Engineering.

3. Reliability and User Qualification Testing. Quality control is a function that we must provide for explicitly in our organizational structure. In Research and Engineering, this responsibility is centered in the Quality Control Branch of the Equipment Engineering Division. It will be the function of this branch to work with each development program and assure the Director of Research and Engineering that reliability specifications and qualification test procedures are fully accommodated in the development cycle. This organization will also give final certification to the Director of Research and Engineering that all test specifications have been met before any piece of equipment is delivered to the user. At the same time, the user must also have assurance that the product he is getting meets the specifications which he has set. The user should therefore participate with the developers during the final stages of testing in the contractor plant or within government facilities. He should also be allowed to maintain test facilities in which he can perform such tests as he deems necessary prior to operational use of a piece of

equipment. In such cases, the developer should also participate in these user tests.

4. Procurement of Developed Equipment. In the case of "few of a kind" procurements closely associated with the development activity, these procurements will be the responsibility of the Equipment Engineering organization. However, when a development leads to essentially "shelf" items, procurement as needed will be the responsibility of the using operational element. Even in this case, however, the Equipment Engineering organization will coordinate with the user during the development program for initiation of the procurement program desired by the user.

5. Liaison and On-Site Technical Assistance. Research and Engineering will assume responsibility for providing technical pfficers for residence with the operational elements when this would be useful in improving communication of the user's needs or providing an application of technology to ongoing user operations.